

## CLAIMS

What is claimed is:

1. Isolated CD2BP2 protein, or an active derivative or fragment thereof having CD2BP2 protein activity.
- 5 2. Isolated CD2BP2 protein of Claim 1, wherein said protein is a derivative possessing substantial sequence identity with SEQ ID NO: 2.
3. Isolated CD2BP2 protein of Claim 1, wherein the protein has the amino acid sequence of SEQ ID NO: 2.
- 10 4. Isolated peptide consisting essentially of the amino acid sequence of SEQ ID NO: 3.
5. Isolated peptide consisting essentially of the amino acid sequence of SEQ ID NO: 9.
6. Isolated peptide consisting essentially of the amino acid sequence of SEQ ID NO: 10.
- 15 7. Isolated nucleic acid molecule which encodes a CD2BP2 protein, or an active derivative or fragment of said protein having CD2BP2 protein activity, or the complement of said nucleic acid molecule.
8. Isolated nucleic acid molecule of Claim 7, wherein the CD2BP2 protein is a derivative possessing substantial sequence identity with SEQ ID NO: 2.

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9. Isolated nucleic acid molecule of Claim 7, wherein said nucleic acid molecule has the same nucleotide sequence as the endogenous gene encoding a CD2BP2 protein.
10. Isolated nucleic acid molecule of Claim 7, wherein said nucleic acid molecule comprises the nucleotide sequence of SEQ ID NO:1.
11. Isolated nucleic acid molecule consisting essentially of a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 3.
12. Isolated nucleic acid molecule consisting essentially of a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 9.
13. Isolated nucleic acid molecule consisting essentially of a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 10.
14. A nucleic acid construct comprising the isolated nucleic acid molecule of Claim 7 operably linked to a regulatory sequence.
15. A nucleic acid construct comprising the isolated nucleic acid molecule of Claim 11 operably linked to a regulatory sequence.
16. A nucleic acid construct comprising the isolated nucleic acid molecule of Claim 12 operably linked to a regulatory sequence.
17. A nucleic acid construct comprising the isolated nucleic acid molecule of Claim 13 operably linked to a regulatory sequence.
18. A recombinant host cell comprising the nucleic acid construct of Claim 14.

19. A recombinant host cell comprising the nucleic acid construct of Claim 15.
20. A recombinant host cell comprising the nucleic acid construct of Claim 16.
21. A recombinant host cell comprising the nucleic acid construct of Claim 17.
22. A method for preparing a CD2BP2 protein, or an active derivative of fragment  
5 thereof, comprising culturing the recombinant host cell of Claim 18.
23. An antibody which selectively binds to isolated CD2BP2 protein, or to an active derivative or fragment thereof.
24. An antibody of Claim 23, wherein the isolated CD2BP2 protein has the amino acid sequence of SEQ ID NO: 2.
- 10 25. A method for assaying the presence of CD2BP2 protein in a cell, comprising contacting said cell with an antibody of Claim 23.
26. The method of Claim 25, wherein said cell is in a tissue sample.
27. An assay for identifying an agent which inhibits activity of CD2BP2 protein, comprising the steps of:  
15 (a) contacting a composition comprising the CD2BP2 protein, or an active derivative or fragment thereof, with an agent to be tested; and  
(b) identifying inhibition of CD2BP2 protein activity.
28. A novel agent which inhibits activity of CD2BP2 protein identified according to the assay of Claim 27.

29. A method of inhibiting CD2BP2 protein activity, comprising contacting said CD2BP2 protein with an agent that inhibits activity of the CD2BP2 protein.
30. An assay for identifying an agent which enhances activity of CD2BP2 protein, comprising the steps of:
- 5 (a) contacting a composition comprising the CD2BP2 protein, or an active derivative or fragment thereof, with an agent to be tested; and
- (b) identifying enhancement of CD2BP2 protein activity.
31. A novel agent which enhances CD2BP2 protein activity identified according to the assay of Claim 30.
- 10 32. A method of enhancing the activity of CD2BP2 protein, comprising contacting said CD2BP2 protein with an agent that enhances activity of the CD2BP2 protein.
33. A method of identifying an agent which modulates signal transduction or cell adhesion, comprising the steps of:
- 15 (a) contacting a composition comprising the CD2BP2 protein, or an active derivative or fragment thereof, with an agent to be tested; and
- (b) identifying modulation of CD2BP2 protein activity, wherein the presence of modulation of CD2BP2 protein activity indicates that the agent modulates signal transduction or cell adhesion.
- 20 34. A method of modulating signal transduction or cell adhesion, comprising contacting CD2BP2 protein with an agent that modulates CD2BP2 protein activity.

35. An assay for identifying an agent which enhances CD2-triggered IL-2 production, comprising the steps of:
- (a) contacting a composition comprising the CD2BP2 protein, or an active derivative or fragment thereof, with an agent to be tested; and
- 5 (b) identifying enhancement of IL-2 production.
36. A novel agent which enhances CD2-triggered IL-2 production identified according to the assay of Claim 30.
37. A method of enhancing CD2-triggered IL-2 production, comprising contacting a cell comprising CD2BP2 protein with an agent that enhances CD2-triggered IL-2 production.
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38. A method according to Claim 37, wherein the agent is selected from the group consisting of CD2BP2, or an active derivative or fragment thereof having CD2BP2 activity, and a nucleic acid molecule comprising a nucleic acid sequence encoding CD2BP2 or an active derivative or fragment thereof having
- 15 CD2BP2 activity.
39. An assay for identifying an agent which inhibits CD2-triggered IL-2 production, comprising the steps of:
- (a) contacting a composition comprising the CD2BP2 protein, or an active derivative or fragment thereof, with an agent to be tested; and
- 20 (b) identifying inhibition of IL-2 production.
40. A novel agent which inhibits CD2-triggered IL-2 production identified according to the assay of Claim 39.

41. A method of inhibiting CD2-triggered IL-2 production, comprising contacting a cell comprising CD2BP2 protein with an agent that inhibits CD2-triggered IL-2 production.
42. A method according to Claim 41, wherein the agent is a nucleic acid molecule comprising a nucleic acid sequence encoding the complement of CD2BP2 or an active derivative or fragment thereof having CD2BP2 activity.
43. A method of targeting an agent to a CD2 molecule in a cell, comprising linking the agent with CD2BP2 protein or an active derivative or fragment thereof having CDBP2 activity.
44. An isolated nucleic acid molecule comprising a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 3, wherein said nucleic acid molecule does not naturally comprise said nucleotide sequence.
45. An isolated nucleic acid molecule comprising a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 9, wherein said nucleic acid molecule does not naturally comprise said nucleotide sequence.
46. An isolated nucleic acid molecule comprising a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 10, wherein said nucleic acid molecule does not naturally comprise said nucleotide sequence.
47. An isolated protein encoded by the nucleic acid molecule according to Claim 44.
48. An isolated protein encoded by the nucleic acid molecule according to Claim 45.
49. An isolated protein encoded by the nucleic acid molecule according to Claim 46.

50. A method of enhancing protein-protein interactions, comprising contacting a protein encoded by an isolated nucleic acid molecule comprising a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 3, wherein said nucleic acid molecule does not naturally comprise said nucleotide sequence,  
5 with a protein encoded by an isolated nucleic acid molecule comprising a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 10, wherein said nucleic acid molecule does not naturally comprise said nucleotide sequence.
51. A method of enhancing protein-protein interactions, comprising contacting a  
10 protein encoded by an isolated nucleic acid molecule comprising a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 9, wherein said nucleic acid molecule does not naturally comprise said nucleotide sequence, with a protein encoded by an isolated nucleic acid molecule comprising a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 10,  
15 wherein said nucleic acid molecule does not naturally comprise said nucleotide sequence.
52. A method of enhancing protein-protein interactions, comprising contacting a  
20 protein comprising the amino acid sequence of SEQ ID NO: 3, wherein said protein does not naturally comprise said amino acid sequence, with a protein comprising the amino acid sequence of SEQ ID NO: 10, wherein said protein does not naturally comprise said amino acid sequence.
53. A method of enhancing protein-protein interactions, comprising contacting a  
25 protein comprising the amino acid sequence of SEQ ID NO: 9, wherein said protein does not naturally comprise said amino acid sequence, with a protein comprising the amino acid sequence of SEQ ID NO: 10, wherein said protein does not naturally comprise said amino acid sequence.